

3. (Amended) A conductive system comprising:
a substrate;
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and
a plurality of conductive structures embedded in the foamed material layer, [The conductive system of claim 1,] wherein the foamed material layer has a dielectric constant of between about 1.2 and about 1.8.
5. (Amended) A conductive system comprising:
a substrate;
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and
a plurality of conductive structures embedded in the foamed material layer, [The conductive system of claim 1,] wherein the foamed material layer is a foamed aerogel layer.
6. (Amended) [An] A conductive system comprising:
a substrate;
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and
a plurality of conductive structures embedded in the foamed material layer.
7. (Amended) A conductive system comprising:
a substrate;
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and
a plurality of conductive structures embedded in the foamed material layer, [The conductive system of claim 6,] wherein the plurality of conductive structures embedded in the foamed material layer are conductive circuit lines.

10. (Amended) A conductive system comprising:
a substrate;
a foamed material layer on the substrate, the foamed material layer having a surface that
is hydrophobic and a cell size of less than about one micron; and
a plurality of conductive structures embedded in the foamed material layer, [The
conductive system of claim 6,] wherein the foamed material is a foamed polymer containing
silane.
11. (Amended) A conductive system comprising:
a substrate;
a foamed material layer on the substrate, the foamed material layer having a surface that
is hydrophobic and a cell size of less than about one micron; and
a plurality of conductive structures embedded in the foamed material layer, [The
conductive system of claim 6,] wherein the cell size is less than about .1 micron.
42. (Amended) [An] A conductive system comprising:
a substrate;
a foamed material layer on the substrate, the foamed material layer having a surface that
is hydrophobic; and
a plurality of copper structures embedded in the foamed material layer.
43. (Amended) [An] A conductive system comprising:
a substrate;
a foamed material layer on the substrate, the foamed material layer having a surface that
is hydrophobic and a cell size of less than about one micron; and
a plurality of aluminum structures embedded in the foamed material layer.

Please add the following new claims.

46. (New) The conductive system of claim 2, wherein the substrate comprises a semiconductor.
47. (New) The conductive system of claim 2, wherein the substrate comprises a doped semiconductor.
48. (New) The conductive system of claim 3, wherein the substrate comprises an undoped semiconductor.
49. (New) The conductive system of claim 3, wherein the substrate comprises an epitaxial layer supported by a semiconductor.
50. (New) The conductive system of claim 5, wherein the substrate comprises an epitaxial layer supported by an insulator.
51. (New) The conductive system of claim 5, wherein the substrate comprises silicon.
52. (New) The conductive system of claim 7, wherein the substrate comprises germanium.
53. (New) The conductive system of claim 7, wherein the substrate comprises gallium arsenide.
54. (New) The conductive system of claim 10, wherein the substrate comprises silicon-on-insulator.
55. (New) The conductive system of claim 10, wherein the substrate comprises silicon-on-sapphire.